

WHAT IS CLAIMED IS:

- 1        1.        A method of tuning a voltage controlled oscillator comprising:  
2                measuring a frequency of oscillation of the voltage controlled oscillator;  
3                comparing the frequency of oscillation to a desired frequency;  
4                generating a logic signal; and  
5                applying the logic signal to a resistor,  
6                wherein the resistor is coupled to a first capacitor and a second capacitor, the first  
7                capacitor is coupled to an inductor, and the second capacitor is coupled to a first supply terminal.
  
- 1        2.        The method of claim 2 wherein the second capacitor is a junction varactor.
  
- 1        3.        The method of claim 2 wherein the second capacitor is a MOS varactor.
  
- 1        4.        The method of claim 2 wherein the first supply terminal is ground.
  
- 1        5.        An integrated circuit having a voltage controlled oscillator comprising:  
2                a first inductor;  
3                a first capacitor coupled to the first inductor;  
4                a first varactor diode coupled to the first capacitor; and  
5                a first isolation resistor coupled to the first capacitor and the first varactor diode,  
6                wherein the first isolation resistor is configured to receive a control voltage.
  
- 1        6.        The integrated circuit of claim 5 further comprising:  
2                a second inductor;  
3                a second capacitor coupled to the first inductor;  
4                a second varactor diode coupled to the first capacitor;  
5                a second isolation resistor coupled to the second capacitor and the second varactor  
6                diode, wherein the second isolation resistor is configured to receive the control voltage;  
7                a first device having a drain coupled to the first inductor and a gate coupled to the  
8                second inductor; and  
9                a second device having a drain coupled to the second inductor and a gate coupled  
10                to the first inductor.

1           7. The integrated circuit of claim 6 further comprising:  
2           a current source coupled to a source of the first device and a source of the second  
3           device.

1           8. The integrated circuit of claim 7 wherein the current source is a common  
2           source device.

1           9. The integrated circuit of claim 7 wherein the first device and the second  
2           device and n-channel CMOS devices.

1           10. An integrated circuit having a voltage controlled oscillator comprising:  
2           a first inductor;  
3           a second inductor;  
4           a first capacitor coupled to the first inductor;  
5           a second capacitor coupled to the first inductor;  
6           a third capacitor coupled to the first capacitor;  
7           a fourth capacitor coupled to the second capacitor;  
8           a first isolation resistor coupled to the first capacitor and the third capacitor,  
9           wherein the first isolation resistor is configured to receive a control voltage;  
10           a second isolation resistor coupled to the second capacitor and the fourth  
11           capacitor, wherein the second isolation resistor is configured to receive the control voltage;  
12           a first device having a drain coupled to the first inductor and a gate coupled to the  
13           second inductor; and  
14           a second device having a drain coupled to the second inductor and a gate coupled  
15           to the first inductor.

1           11. The integrated circuit of claim 10 further comprising:  
2           a current source coupled to a source of the first device and a source of the second  
3           device.

1           12. The integrated circuit of claim 11 wherein the current source is a common  
2           source device.

1                   13. The integrated circuit of claim 11 wherein the first device and the second  
2 device and n-channel CMOS devices.

1                   14. The integrated circuit of claim 11 wherein the third and fourth capacitors  
2 are junction varactors.

1                   15. The integrated circuit of claim 11 wherein the third and fourth capacitors  
2 are MOS varactors.

1                   16. The integrated circuit of claim 11 wherein the control voltage is a logic  
2 signal.

1                   17. The integrated circuit of claim 11 wherein the control voltage is an analog  
2 signal.

1                   18. The integrated circuit of claim 10 wherein the integrated circuit is an RF  
2 transceiver.

1                   19. A phase-locked loop comprising:  
2                   a phase detector configured to receive a reference clock;  
3                   a low-pass filter coupled to the phase detector;  
4                   a voltage-controlled oscillator coupled to the low-pass filter; and  
5                   a divider coupled between the voltage-controlled oscillator and the low-pass filter,  
6                   wherein the voltage-controlled oscillator comprises:  
7                   a first inductor;  
8                   a second inductor;  
9                   a first capacitor coupled to the first inductor;  
10                  a second capacitor coupled to the first inductor;  
11                  a third capacitor coupled to the first capacitor;  
12                  a fourth capacitor coupled to the second capacitor;  
13                  a first isolation resistor coupled to the first capacitor and the third  
14                  capacitor, wherein the first isolation resistor is configured to receive a control voltage;

15                   a second isolation resistor coupled to the second capacitor and the fourth  
16  capacitor, wherein the second isolation resistor is configured to receive the control voltage;  
17                   a first device having a drain coupled to the first inductor and a gate  
18  coupled to the second inductor; and  
19                   a second device having a drain coupled to the second inductor and a gate  
20  coupled to the first inductor.

1                   20.    The integrated circuit of claim 19 wherein the first device and the second  
2  device and n-channel CMOS devices.

1                   21.    The integrated circuit of claim 19 wherein the third and fourth capacitors  
2  are junction varactors.

1                   22.    The integrated circuit of claim 19 wherein the third and fourth capacitors  
2  are MOS varactors.

1                   23.    An electronic system comprising the phase-locked loop of claim 19.